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Increasing the health literacy of learning disability and mental health nurses in physical care skills: a pre and post-test evaluation of a workshop on diabetes care.

Abstract

This paper presents the pre- and post-test results of the outcomes of a workshop designed to increase learning disability and mental health nurses' knowledge and skill to undertake interventions for service users at risk of, or with a diagnosis of type 2 diabetes. Health literacy is also discussed as a way of explaining why such nurses may lack expertise in physical health care. Findings from the workshop show that learning disability and mental health nurses have the motivation to increase their health literacy (skills and knowledge) in diabetes care. The potential of such workshops, and how organisations looking forward to the future can build health literacy, is discussed.

Introduction

People with a learning disability or serious mental illness face complex health inequalities that cannot be understood solely from the perspective of their condition. The increased incidence of physical ill health, including diabetes, for people with a learning disability is due to complex interactions including ability to communicate, poverty, lifestyle and access to physical assessment (Jinks et al., 2011; Hardy and White 2013). These conditions are also associated with a wide array of social and economic circumstances (Department of Health, 2008; Department of Health, 2011). Causation may also be due to current treatment regimes, including side effects from psychotropic medication (Edward et al., 2010; Curtis and Curtis, 2013). The seriousness of physical symptoms being identified as psychosomatic behaviour, known as diagnostic overshadowing, is also significant when considering the number of people with a learning disability or serious mental illness being at risk of, and suffering from, long-term physiological conditions (Nocon, 2004).

Individuals with a learning disability or serious mental illness are also less likely to be offered screening which the general population would receive routinely: for example cholesterol, urine

or weight checks, or opportunistic advice regarding smoking cessation (Oullette-Kuntz, 2005; Hardy et al., 2011). This suggests that not only are service users at risk due to lifestyle choices and the impact of psychotropic medication, but also that to some degree they are marginalised from mainstream prevention services. The lifestyle factors that

pose significant risk, such as poor diet, reduced physical activity, smoking and alcohol consumption, are all prevalent within the learning disability and serious mental illness population, and potentially could be modified by sound advice, guidance and assessment by the mental health or learning disability practitioner.

Prevalence of Diabetes

Diabetes poses a significant public health problem, as both morbidity and mortality are greater in patients with diabetes compared to the general population. Diabetes patients have a higher risk of death from cardiovascular disease (typically coronary heart disease or stroke) and micro-vascular disease, including sight threatening retinopathy and nerve damage (neuropathy); leading to lower limb amputation (National Institute of Clinical Excellence -NICE, 2008; World Health Organisation- WHO, 2011). Rates of type 2 diabetes have increased dramatically in recent years: Diabetes UK (2012) reports a prevalence of 4.5% for both type 1 and type 2 diabetes in the United Kingdom. Worldwide, particularly in emerging economies, the International Diabetes Federation (IDF, 2012) estimates a global prevalence of 8.3%. Type 2 diabetes is associated with a variety of lifestyle factors, such as obesity, poor diet and a sedentary lifestyle, and also the metabolic effects of anti-psychotic medication (Edwards et al., 2010, Shiers and Holt, 2012; Curtis and Curtis, 2013).

Diabetes and people diagnosed with a learning disability

Diabetes is a complex condition. The comprehension, communication and literacy difficulties

experienced by people with learning disabilities makes it a major challenge to undertake appropriate assessment and related interventions for the condition (Kelly, 2011). In 2009, Diabetes UK reported that 9 million people in the UK had learning disabilities, with an estimated 270 000 of these having type 2 diabetes (Diabetes UK, 2009). However, this remains unsubstantiated (Emerson, 2011). People with learning disabilities are more prone to developing type 2 diabetes than those without learning disabilities (Disability Rights Commission, 2006-DRC; Department of Health, 2009). This increased propensity is higher in people diagnosed with Down's syndrome, particularly if they are female and obese (Phillips, 2009). Obesity tends to occur more frequently in those with learning disabilities, which may be attributed to poor diet and inactive lifestyles (Jinks et al., 2011).

Diabetes and people diagnosed with a serious mental illness

There is a recognised higher incidence of type 2 diabetes in people with a serious mental illness. There is also a recognised genetic predisposition to insulin resistance, which may be a factor related to increased incidence levels in this group (Hardy et al., 2013). Another theory is people with schizophrenia are a major risk group for abnormal glucose homeostasis, due to hereditary factors for developing the metabolic syndrome (Hulstsjö and Hjelm, 2012; Curtis and Curtis, 2013); the prevalence of type 2 diabetes is 2-4 times higher when schizophrenia is present (Edward et al., 2010; Schizophrenia Commission, 2012). Similarly, people diagnosed with bipolar disorder are likely to develop type 2 diabetes at a rate three times greater than in the general population (Calkin et al., 2013).

There is also high morbidity when serious mental illness and diabetes (type 2) is present. The Disability Rights Commission (DRC) (2006) found that 41% of people having a comorbidity of schizophrenia and diabetes are aged under 55 years; much higher than the corresponding proportion in the general population (30%). Furthermore, 19% of people with this comorbidity died prematurely; a rate twice as high as in the general population (9%). Nash (2009) states there are two major reasons for this: lifestyle factors and iatrogenic side effects of anti-psychotic

medication. There is also a high risk of metabolic side effects, such as diabetes, especially when second generation anti-psychotics are prescribed (Edward et al., 2010; Curtis and Curtis, 2013). Weight gain, which is also a common side effect of some antipsychotics can contribute to the risk of type 2 diabetes developing, as it initiates the cascade of insulin resistance, hyperglycemia and pancreatic beta cell failure that features as the metabolic syndrome (Manu et al., 2013).

Calkin et al., (2013) report that there are shared pathologies with similar epigenetic interactions linking type 2 diabetes and bipolar disorder. These may be expressed in the presence of environmental factors such as stress, changes to diet and the some prescribed medications.

The Learning Disability Nursing and Mental Health Nursing role

An important part of the role of the registered nurse is to have greater awareness of the signs and symptoms of physical ill health including long term physical conditions (in this case diabetes), in relation to local service provision, so that practitioners can guide service users to the most appropriate care, treatment and support (Edward et al., 2010; Manthorpe and Martineau, 2010; Sherrin, 2012; Hardy and White, 2013). Learning disability nurses, for example, can assist service users to gain access to healthcare services suited to their needs, such as specialized diabetes services (Manthorpe and Martineau, 2010). This would suggest that in providing holistic care to service users and their carers, learning disability and mental health nurses need some basic knowledge in relation to the screening and management of long-term conditions, and this has been recognised in recent nursing reviews in both learning disability and mental health nursing (Department of Health, 2007; Department of Health, 2006). Thus the nurse has a role in promoting both psychological and social aspects of health, including physical well-being, which are all central to recovery and person-centred care (Howard and Gamble, 2011; Hulstsjö and Hjelm, 2012; Sheerin, 2012; Hemingway et al., 2013a).

Evidence suggests that providing advice and guidance to individuals regarding both their mental and physical wellbeing improves service users' self-esteem and increases their ability to manage their own health (Nocon, 2004; Lennox et al., 2007). However, learning disability nurses and other care providers have been increasingly found to be inadequate, with some staff indifferent to (Mencap, 2007) or even neglecting (Jenkins and Davies, 2010) the basic physical health care of learning disability service users..

There are many reasons why service users' long term physical needs may not be identified. One may be a lack of confidence or ability in relation to physical health monitoring by learning disability and mental health staff. Training needs analyses carried out by Nash (2009) and Howard and Gamble (2011) of in-patient and community-based mental health staff found that staff did not have up-to-date skills or knowledge, and lacked confidence in physical care activities; thus delaying appropriate intervention. Manthorpe and Martineau (2010) also noted that health and social care staff providing services for people with a learning disability need education and training in physical health interventions.

However it is encouraging that good practice does exist. For example, the learning disability nurses' collaboration in primary care has initiated annual health checks for adults with learning disabilities (Martin et al., 2004, Manthorpe and Martineau, 2010). Additionally, studies have shown that mental health nurses are in an ideal position to assess mental health service users' physical health needs (Nash, 2010a; Howard and Gamble 2011; Robson et al., 2012; Edward et al., 2012;).

Sheerin (2012) suggests that to be truly holistic, learning disability nurses need to work with the service user to gain access to the same healthcare as the general population. There are comprehensive assessments now available now for the learning disability nurse (Martin et al., 2004; Cooper et al., 2006, Phillips 2009) and mental health nurses (Phelan, 2004; White et al., 2009; Eldridge et al., 2011) to assess and inform clinical decision-making towards service users' physical needs. Through the holistic assessment of service users' needs, learning disability and mental health nurses have the opportunity to assess for long-term life-limiting physical health

conditions, and to promote positive lifestyle choices (Department of Health, 2009; Department of Health, 2011).

Physical healthcare project

Alongside colleagues from SWYPFT (South West Yorkshire Partnership Foundation Trust) we applied to the Yorkshire and Humber Strategic Health Authority Clinical Skills Network and secured a grant to produce some interactive education and training packages specifically applied to the learning disability and mental health context, and delivered in a workshop setting. This project was developed alongside the Yorkshire and Humber Clinical Skills Network initiative to improve physical health interventions in learning disability and mental health contexts (Jordan, 2011). Building on previous collaborations in physical health generally (Hargate et al., 2008) and towards medicine management education and training for mental health nurses (Hemingway et al., 2010, Hemingway et al., 2011), organizations involved in the project have utilized Trust, University staff and service users involved in pre- and post-registration of nurses to develop the package. Such collaboration is identified as a key determinant to achieve positive service user outcomes (Emerson and Baines, 2010; Jordan 2011).

Workshop Aim

The aim of the workshop was to increase understanding and skills for learning disability and mental health nurses when working with service users diagnosed with diabetes.

The educational package and materials

The educational package consisted of a 'reader' for the participant to use to obtain the knowledge needed for practice. A DVD was also produced, based on the life-story of a person living with a diagnosis of diabetes type 1. The DVD included episodes of the diabetes' story where the diagnosis of type 2 diabetes was made, and was edited so presenters could add the theory behind the narrative as appropriate. It was also believed that the interactive component of DVDs into a training day would enhance its effectiveness, in contrast to reading book-based

alternatives (Blows 2010; Nash 2010b; Collins et al., 2013) and this had proved successful in a pilot workshop staged in 2011 (Hemingway et al., 2013a). In the afternoon, simulated skills sessions using clinical equipment (for example: pen injectors and blood glucose monitors), allowed participants the opportunity for hands-on practice using the equipment. Finally, the participants came back to the lecture theatre to review the day.

Methods

Sample Recruitment

A non-random (convenience) sample, comprising a mixture of qualified and unqualified staff from South West Yorkshire Partnership Foundation Trust, and student nurses from the University of Huddersfield were invited to a Day Workshop at the University, and invited to participate in the study.

Ethical Considerations

Permission to undertake the study was sought and granted from the University School Research and Ethics Panel. Withdrawal of consent could be made at anytime of the project. Confidentiality and anonymity was maintained at all times.

A pre- and post-test design was used to evaluate the project. Each participant was assessed on their response to 13 equally weighted multiple choice questions administered both before and after the workshop. On each testing occasion, one mark was awarded for each correct answer, leading to a maximum score of 13. Scores obtained before the workshops are referred to as *Pre* scores; those obtained after the workshop are referred to as *Post* scores.

The questionnaire explored participants' knowledge and understanding in relation to the extent of diabetes within the UK population, and projections for the future. Certain questions explored the symptomology associated with hypo- and hyper-glycaemia, with a focus on the risk factors associated with the development of type 2 diabetes. An additional section of the questionnaire looked at the advice given to service users in relation to testing associated with diabetes,

lifestyle choices and the management of their condition. The long-term consequences of diabetes were also considered.

A further 10-item questionnaire was also used to evaluate the workshop content. The questionnaire included items eliciting demographic characteristics; some Likert-style response questions regarding certain aspects of the workshop delivery (for example use of DVD, guided reading booklet and use of simulated practice); and items for participants to rate whether the workshop facilitated an increase their knowledge and skills in diabetes care.

Data Analysis

Quantitative data was analysed using SPSS (Version 20.0). Qualitative content analysis of the open-ended comments was undertaken using the method described by Newell and Burnard (2006).

Quantitative Results

A total of 110 questionnaires were analysed: comprising 62 administered before the workshop and 48 administered after the workshop. Of the 62 pre-workshop questionnaires, 30 were completed by student nurses and 32 by qualified practitioners. Of the 48 post-workshop questionnaires, 22 were completed by student nurses and 26 by qualified practitioners. The evaluation of the workshop questionnaire was completed by 49 respondents. The lack of responses may have been due to some participants leaving the workshop early. Twenty respondents (40.8% of valid responses) were aged 18-25 years. 7 respondents (14.3%) were aged 26-35 years. 11 respondents (22.4%) were aged 36-45 years. 10 respondents (20.4%) were aged 36-45 years. 1 respondent (2.0%) was aged over 56 years. Forty four respondents were female (91.7%) and 4 were male (8.3%).

Twenty two respondents (44.9%) had worked 0-5 years in a health care context, 8 respondents (16.3%) had worked 6-10 years, 6 respondents (12.2%) had worked 11-15 years, 3 respondents had worked 15-19 years and 13 respondents (26.5%) had worked 20+ years. Nineteen respondents (39.6%) worked in Learning Disability branch, and 29 respondents (60.4%) in Mental Health branch. The context of 12 respondents (24.5%) was *In-patient*, 21

respondents (47.7%) had the context of *Community*, 1 respondent (2.3%) had the context of *Day care services*. Ten respondents (22.7%) reported their context as *Other*. The majority of these latter respondents were student nurses. Thirty three respondents (67.3%) reported themselves as *Very Satisfied* with the topic delivery, and 16 (32.7%) reported themselves as *Satisfied*. No respondents reported themselves as *Not satisfied*.

Respondents were also asked to rate 4 teaching methods on a scale of 1 (least effective) to 5 (most effective). The clinical instruments score received the highest median ranking of 5 (range 2-5); the other teaching methods (multiple choice questionnaire (MCQ), video demonstration and guided reading package all received a median score of 4 (range 2-5 for MCQ; 1-5 for the video demonstration and guided reading package). However, the highest mean ranking score was for the video demonstration at 4.28. The score for the guided reading package was left blank by a sizable minority of respondents.

Amongst all respondents, the mean *Pre*-score was 5.90 (SD 2.17), and the mean *Post* score was 7.04 (SD 1.85). Hence the mean difference between *pre*- and *post*-scores was 1.14, representing an increase of 8.8 percentage points. A t-test found the difference between *pre*- and *post*-scores to be statistically significant ($p=0.004$), with a 95% confidence interval given by (0.36, 1.91). The level of significance was calculated on the basis of an unpaired samples t-test: as the *pre*- and *post*-workshop questionnaires could not be matched. However, pairing the data would not have affected the inference of a significant difference between *pre*- and *post*-scores.

Amongst student nurses, the mean *Pre*-score was 4.90 (SD 0.30), and the mean *Post*-score was 6.09 (SD 0.34). Hence the mean change in score following the workshop was 1.19. Amongst practitioners, the mean *Pre*-score was 6.84 (SD 0.39), and the mean *Post*-score was 7.85 (SD 0.33). Hence the mean change in score following the workshop was 1.01. While this represents a smaller improvement than was observed in students, the baseline score of students was lower. An analysis of covariance conducted on the data found both respondent status (i.e. student or practitioner) and test condition (i.e. *pre*- or *post*-workshop) to be

statistically significant ($p < 0.001$ for respondent status; $p = 0.002$ for test condition). Pre- and post-scores for both students and practitioners are illustrated in Figure 1.

Insert Fig 1 about here

Qualitative Content Analysis

Written responses to the five response questions were transcribed verbatim; responses that were very short or had no meaning was excluded. A content analysis of the data was then undertaken. According to Newell and Burnard (2006) two approaches can be used in content analysis: (i) examine the answers to pre-set questions deductively, or (ii) allow themes to be developed inductively from the data. In this instance, analysis was based on responses to questions where the quantitative results were already known. This approach was also used because the written responses from the questionnaire were more focused and concise than could be obtained from conventional semi-structured, audio-recorded interviews.

Content analysis results

Overall there were no multiple meaningful responses included in the analysis. After considering this data on answers to the five prompt questions, four themes emerged from the data: Satisfaction with the workshop; Suggestions to improve the workshop content; Use of a life story; Clinical perspective.

Key **LDP** = Learning disability practitioner. **LDS** = Learning disability student nurse. **MHP** = Mental health practitioner. **MHS** = Mental health student nurse.

Satisfaction with the workshop

Evaluation is important; particularly of aspects that were effective. The qualitative results showed the overwhelming majority of the participants were satisfied with the workshop content. Some participants positively responded about what they had gained from attendance, with knowledge a definite benefit with mental health nurses:

MHP. 'Enjoyed day, updating on diabetes';

MHP. ' Reinforced knowledge. Change in equipment/treatments';

Then overall:

MHP. 'I felt the training was relevant to our practice and enjoyed the session. I feel I have gained knowledge and understanding about diabetes'.

Similarly, from learning disability nurse participants:

LDP. 'Has improved knowledge and understanding of medication in particular';

One respondent provided a clinical example of what the one learning disability nurse had gained:

LDP. 'We haven't recently had a service user with diabetes, but a young lad is to be discharged soon (transfer of care), so today has been valuable';

And a knowledge gap seemed to have been identified and met:

LDP. 'Increased awareness of diabetes in relation to one client group. Identified some major gaps in practice';

The knowledge gain was also echoed in comments from the student nurse participants:

LDS. 'Have learnt more about different types of diabetes';

An in-depth of understanding was revealed by other mental health students:

MHS. 'It was useful to receive some detailed information with regards to diabetes';

Student nurses seemingly also had a working knowledge that would transfer to clinical practice:

MHS. 'Very. satisfied, leave today with a better understanding of the management'.

The content delivery was also highlighted for praise:

LDP. 'Good short interesting sessions, time scale relevant.'

With praise on the timing and pace of the session:

MHP. 'Good that tutors moved on quickly from each aspect'

The contrasting use of DVD, theoretical presentation and clinical skill practice also received praise:

LDP. 'Good use of learning tools';

The same techniques were identified as enabling learning to take place:

MHP. 'Very good, interesting and easy to understand'.

Several comments were made alluding to the workshop's relevance to the clinical context:

LDS. 'Very relevant to practice';

A vote for its generalised significance was also reported:

MHP. 'This is relevant to all nurses'

With a further benefit for student nurses, with two students commenting:

MHS. ' Yes, allowed me to apply the theory to a situation';

MHS. ' Very good for consideration in practice';

LDS. 'Good interesting, gave a good insight';

A final comment appeared to sum up the satisfaction of participants:

LDP. 'Great idea and went well'.

Suggestions to improve the workshop content

In contrast there were some detractors on the workshop format and delivery. The majority of criticism came from the registered nurses. Critical comments relating to the content:

LDP. 'Wasn't what I expected, more evidence for treatment plans would be useful. Lots of lecture style teaching, smaller groups would improve participation maybe?'

Others reported more time needed than the time allocated:

MHP. 'Would have liked feedback on questionnaire at the end of the session. What guided the reading package? Clinical demo too brief';

MHP. ' More time in clinical demonstrations';

MHP. ' More time on practical aspects/demonstrations';

MHP. 'Think this would be a good course for over a couple of days-lots to learn to remember. Excellent and interesting'.

MHS. ' More time allowed for the session'

MHS. 'More time'

Furthermore the organisation of the practical sessions was an issue:

LDP. 'Group quite big'

Another comment indicated that the content was aimed too high a level for their understanding:

LDP. 'felt needed more basic information i.e. types-first hyper/hypo explanation. Basic on anatomy';

Practitioners also referred to the need for a more practical clinical content:

LDP. 'Needed more practical advice of how to support people'.

MHP. 'Would have liked more practical advice on how to support/encourage clients with taking medication/monitoring'.

The need for a more specific content delivery was also expressed:

MHP 'Satisfied, but would have benefitted from more info re type 2-management/process of the diagnosis'

MHP 'More type 2 in terms of risk of development for my clients'.

With the management of serious events associated with diabetes, an omission, highlighted from both registered and student nurse participants was:

MHP. 'More in depth discussion around the physiological specifics and functioning of insulin, differences physiologically of type 1 & type 2. More in-depth information on signs and symptoms of hypo and hyper. Education and training aimed at practitioners to enable nurses to deal with emergencies;

LDS. 'More information on the functions of insulin in the body. More info on NICE guidelines. Help for practitioners to act fast in serious situations'.

Use of a life story

This was the workshop item that received most comments. Overall the DVD content featuring a person's experience of diabetes was highly rated, allowing an understanding of the person's experience and transfer of knowledge.

Comments about using a service user's story of diabetes receiving praise:

LDP. 'Very informative. Thought the delivery from ---- very interesting';

LDP. 'Video. Very interesting when coming from a real person';

LDS. 'Was interesting to have a person with diabetes here';

MLDS 'Case scenario very useful, it gives a real picture';

MHS. 'Interactive real life scenario, views of service user'.

The reality of the DVD then facilitated the participants' learning:

LDS. 'Very useful information, case scenario was the most effective learning tool'

LDS. ' A very good informative workshop-good to see it from the patients perspective'

MHS. 'Yes can understand complexities of diabetes that people have to undergo'.

MHS. 'Very valuable to see the DVD and the use person's diabetes experience'

MHP. 'Yes. Very much so. ---- was very clear in his descriptions. It gave excellent insight into how diabetes can effect someone and ways of combating long term issues'.

MHS. 'Found the DVD and ---- very helpful in presenting an individual's journey from diagnosis to living with diabetes'.

With one comment particularly valuing the lifestory element:

MHP. ' Patient experience is how we learn'.

There were some not-so-positive comments about the use of the DVD:

MHS. 'Was good. Very interesting topic though it is complex, diabetic patient could have spoken without need of DVD'.

MHP. ' Yes but would have preferred him talking directly rather than a video'

With the life story seemingly diluting the knowledge given:

LDS. ' I felt that the case scenario was more of a life story, than an informative video'

MHP. 'More based on individuals' experience-than research and evidence'.

Finally a different content for the DVD was suggested that was more focused toward replicating real life:

LDS. 'I would find it very helpful to see a DVD on people actually going into a hyper/hypo. More information on the functions of insulin in the body.

Reference to nursing context

This theme includes just a few comments, but indicated that to aid understanding and relevance of the session more focused on the context of practice particularly learning disability

LDS. 'Not much reference to the LD nursing (perspective)

LDS. ' Not much reference to LD nursing'.

LDS. 'Could be more related to LD'

LDS. 'Lack of LD' More LD cases needed.

LDP. 'More mental health based than LD'

One mental health nurse echoed that the day was good, but there needed to be more consideration for the fields of nursing and their day-to-day work experience.

MHP. 'Very good. Easy to understand. Not all relevant to clinical practice'.

Discussion

The aim of the workshop was to increase understanding of and skills for learning disability and mental health nurses when working with service users diagnosed with diabetes. Overall the statistical and content analysis results show that the aim was achieved as in other workshops in the series (Edward et al., 2012; Hemingway et al., 2013c). Quantitatively, the workshop produced a statistically significant improvement of 1.14 in diabetes scores over all respondents ($p=0.004$): from a mean of 5.90 to a mean of 7.04 (out of a maximum of 13) showing a transfer of knowledge had taken place. The improvement remains significant when controlling for respondent status (i.e. student or registered nurse). Controlling for the testing condition, practitioners scored significantly better than students both pre- and post-workshop. However,

improvement was slightly greater in students than in practitioners, albeit from a lower baseline. An evaluation of a previous pilot diabetes workshop (Hemingway et al., 2013a) resulted in a statistically significant mean improvement of 5.50 in diabetes scores of 35 respondents: from a pre-test mean of 4.76 to a post-test mean of 10.26 (out of a maximum of 13). This improvement was also found to be statistically significant ($p < 0.001$). Students at this workshop also showed greater improvement following the workshop than practitioners; but as in the current analysis, this improvement was from a lower baseline.

Thus it can be stated with confidence that a transfer of knowledge and potentially a higher level of health literacy was demonstrated. The higher knowledge gain by students is not surprising, as it could be expected that practitioners would have more knowledge gained through their longer experience.

When evaluating the workshop statistically, the analysis clearly showed satisfaction with the workshop. By far the most popular educational intervention used was the video. Qualitative content analysis in the main concurred with this, and in particular the use of a real narrative of a service user's story. DVDs have been utilized successfully in nurse education (Robinson-Smith, 2009; Williams et al., 2009). Lamont and Brunero (2012) highlighted how DVDs can be authentic and can facilitate participation and clinical reasoning on the topic at hand, with the added bonus of being able to control learning allied to the content being presented: all standards that needed to be attained when considering the DVD use. This certainly appears to be the case with the high statistical rating and positive comments the use of the service users' life narrative of diabetes. There were detractors to the use of the DVD, with some participants preferring a real life 'in-vivo' presentation and more concentration on actual episodes of hyper- or hypoglycemia being suggested. The pilot workshop on diabetes undertaken in 2012 (Hemingway et al., 2013a) did actually utilize a DVD content that covered these content areas; however, as these were not rated highly statistically compared to other learning mediums, another DVD content of the lifestory was developed as an alternative learning medium.

Lamont and Brunero (2012) debated whether to use simulated real-life scenarios or life story content to create the conditions of authenticity, and facilitate participation and clinical reasoning. Overall, the workshop did appear to produce the conditions Lamont and Brunero (2012) alluded to, but there were several comments indicating that it needs to be balanced with practical simulated learning opportunities, or, in the case of the workshop participants, more time spent on the practical elements in the clinical skills laboratories.

The day workshop was designed to allow practitioners to access the workshop when pressured with clinical commitments; however, this will be reviewed for future planning of events including increasing the workshop length. Finally, there was a vocal minority of learning disability nurses who wanted examples or content found in learning disability contexts. The workshop was designed to give the participants understanding of diabetes and related interventions that they could then relate back to their clinical areas, and this has been suggested as the way forward elsewhere (Happell et al., 2013). Planning a workshop specific to a particular learning disability or mental health conditions potentially could be resource-intensive with fewer participants. One way forward may be to increase the length of the workshop to allow for more field-specific examples, and increase the chances of authenticity of the workshop to the clinical context.

Did participants become more physical health literate?

One way of explaining the improved diabetes knowledge scores of participants is that they became more physical health literate. Health literacy has been identified as one step forward to educate service users toward them becoming more informed, and thus managing their health needs more effectively (Mancuso, 2008). Although more commonly recognized as describing the results of health promotion activities used by service users or populations, health literacy encompasses a broad range of issues, including low literacy abilities as a risk to health. As a consequence, changes in clinical practice are targeted to enable service users to take increased control of their health with the aim of improved physical wellbeing (Raynor, 2012). Service users in particular with low health literacy have been identified as a group who need

targeting by nurses and other health providers, so that they improve their understanding and related adherence to actions that would improve health status (Parker et al., 2003).

Healthcare provision, where the health model is suited to informed consumers, rather than those with challenges to health literacy, needs to change (Parker 2003, Berkman et al., 2010; Raynor 2012). Berkman et al., (2010) also question whether health literacy is an individual process or should have a broader construct to groups or populations with health needs. Friedman et al., (2009) discuss the term 'public health literacy'; concerning the knowledge, skills and engagement of individuals to address the public health of their community. Raynor (2012) has indicated the health literacy role of social and health organisations is to remove barriers to service user understanding and involvement, thus it is hoped that workshops such as the one reported in this paper can facilitate such a change.

People diagnosed with a learning disability or serious mental illness have suffered an inequity in health care provision, and one way of addressing this is to provide nurses (the largest professional workforce in this context) with the knowledge and appropriate skill to act on the service users' behalf. Whether undertaking physical health procedures (Curtis and Curtis, 2013), facilitating lifestyle changes (Happell et al., 2012) or giving advice on how to access and use appropriate healthcare for their needs (Tosh et al., 2010), the argument that nurses need to be physical health literate seems unequivocal. Thus the interactions we have with service users play an important part in empowering service users to be more health literate and thus improve their health status (Macasbasco-O'Connell and Fry-Bowers, 2011). If learning disability and mental health nurses have the requisite knowledge to help service users in their care to negotiate the barriers that the service users face when negotiating the complexities of seeking appropriate service from primary care, then this in turn can prevent health deteriorating and in fact save money in the long term (Mancuso, 2008; Macasbasco-O'Connell and Fry-Bowers ,2011).

Thus the workshop evidence reported in this paper shows how nurses are motivated to improve their knowledge and skills in physical healthcare and that the intervention of a workshop can

help to bridge any potential knowledge and skill gaps and make nurses more informed when dealing with all aspects of the service users' healthcare needs. Evidence that such workshops can directly impact on decreasing morbidity and mortality of such conditions as diabetes needs to be undertaken (Mancuso 2010; Sheridan et al., 2011 De Walt et al.,2011).

Limitations

The small sample of a workshop from a single UK NHS Trust and University limits generalizability. The issue of transferability to practice is also in question: although the statistical results show significance, caution would need to be exercised here. Additionally the data engendered by the questionnaire was more limited than evidence that may have emerged from in-depth interviews.

Conclusion

Diabetes is associated with chronic health problems and early mortality for service users with a learning disability or serious mental illness (Phillips, 2009; Nash, 2010). Thus appropriate preventative or related interventions when a diagnosis is made by the learning disability or mental health nurse is warranted. Nurses' confidence in physical healthcare literacy can empower understanding, provide the physical intervention as required, and give advice to the service user and carer as part of their role. Whether the mantra is person-centered (learning disability) or recovery-focused (mental health) care, physical health literacy could be a way forward in increasing the holistic role of the nurse. What is needed now is to turn the rhetoric of government policy for improving the provision and access service users' experiences into reality. Furthermore, the issue of health literacy is a more corporate phenomena than attendance at the workshop can engender, and organizations would need to include health literacy interventions as part of the workforce role, a major challenge in an already packed itinerary for the nurse.

Conflict of interest statement.

None

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Figure 1: *Diabetes pre- and post scores (all students and practitioners)*

